Partners In Flight
Oregon/Washington Chapter Newsletter

"Keeping Common Birds Common" *Fall 2002*

Reversing Avian Population Declines In Northwest Forests

By Todd Plummer, The Institute for Bird Populations **www.birdpop.org**

What is happening to bird populations on Pacific Northwest forests? Data that we collected on 42 MAPS between 1992 and 2000 suggest that some bird populations have declined by about 25% since 1992. Of the 44 target species that we studied, 30 showed declines on all forests combined. Nowhere in the country have overall population declines been as dramatic and severe as at Umatilla National Forest. Bird populations there have declined by nearly 50% between 1992 and 2000.

MAPS is a cooperative effort among public and private agencies and individual bird banders to operate a continent-wide network of over 500 bird-banding stations. (Monitoring Avian Productivity and Survivorship) stations on 7 national forests Mt. Baker/Snoqualmie and Wenatchee national forests in Washington, and Umatilla, Willamette, Siuslaw, and Fremont national forests in Oregon.

With the financial support and cooperation of the USDA Forest Service, we are working on a new project to address these declines. Our project features three main objectives. The first is to develop statistical models relating avian birth rates, survival rates, and population trends to habitat variables, such as forest type, forest patch size, and understory structure. Then, based on those relationships, we will develop specific, ground-level habitat management guidelines for reversing those population declines by enhancing the particular vital rate (birth rate or survival) that is responsible for the decline. In other words, we want to get the biggest bang for the conservation buck by focusing resources where they will do the most good.

Our analysis showed that low or declining productivity was a major factor driving regional population declines in 12 of 20 substantially declining species, such as Orange-crowned Warbler, Wilson's Warbler, and Western Flycatcher. Low survival rates, on the other hand, contributed to declines of two permanent residents: Winter Wren and Song Sparrow. The last phase of our project will be to work with the Forest Service to integrate our guidelines into the day-to-day decisions of forest managers. Such decisions include those for forest health, water resource management, recreation, wildlife habitat management, and resource extraction.

Within the next five years, the Forest Service will update 20 Land and Resource Management Plans in the Pacific Northwest. Alan Christensen, the Pacific Northwest Regional Wildlife, Fish, Water, Soils, and Range Group Leader, says that the results of our project must be considered during these revisions.

Possible recommendations to come out of this project might include maintaining patches of intact forest larger than some specified threshold size to maximize productivity, or lengthening timber harvest rotations to increase the proportion of mature trees for bird species that nest in older stands. In addition to reversing population declines, these strategies, when appropriately applied, are likely to be excellent tools for improving habitat quality for many organisms in the forest community, including plants, insects, reptiles, and amphibians. ❄

WINTERING OVER

A new study shows that weather on wintering grounds affects nesting success of Neotrops more than previously thought

A new study has revealed critical information challenging the common belief that the breeding success of songbirds is determined almost entirely by factors on their nesting grounds.

Scientists studying neotropical migratory bird species have generally focused on how environmental conditions on their breeding grounds drive changes in the number of young birds they successfully produce. Neotropical migrant birds are those that nest in the U.S. and Canada during spring and summer and migrate to Central America, the Caribbean, and South America for the winter.

But a study in the July issue of the British journal *Global Ecology and Biogeography* reveals that for migratory birds that nest on national forests in Washington and Oregon, late winter weather on their Mexican wintering grounds has a much greater impact on their reproductive success than the weather where they nest. Following El Niño winters, when the weather in west Mexico is cooler and wetter than normal, birds in the Pacific Northwest raise more young.

The study was co-authored by four scientists at The Institute for Bird Populations in Point Reyes Station, California: Phil Nott, David DeSante, Rodney Siegel, and Peter Pyle.

These results are fascinating, remarked Nott, a landscape ecologist and lead researcher of the study. What we discovered was that seasonal weather experienced by birds on their Mexican wintering grounds, just prior to spring migration, determines their subsequent breeding success in the forests of the Pacific Northwest.

The weather in west Mexico is driven predominantly by the El Niño/Southern Oscillation, the see-saw of atmospheric pressure and sea surface temperature patterns in the Pacific, Nott explained. During an El Niño event, the late winter and early spring weather in west Mexico is cooler and wetter than normal. It is probable that during El Niño years in western Mexico, more insects and fruits are available as food for birds, allowing them to maintain good physical condition before and after their perilous migration northwards and to produce more young.

The scientists obtained their results by analyzing data from nine years of operating 36 MAPS (Monitoring Avian Productivity and Survivorship) stations on six national forests in Washington and Oregon. MAPS, the flagship program of The Institute for Bird Populations, consists of a nationwide network of over 500 bird-banding stations that monitor the vital rates of birds (www.birdpop.org/maps.htm). Vital rates include birth rates (productivity) and death rates (survivorship) that together determine whether bird populations increase, decrease, or remain stable. The researchers also used climate and weather data from NASA and the National Oceanic and Atmospheric Administration (NOAA) and data on insect defoliation from the Pacific Northwest Regional Office of the USDA Forest Service.

Nott remarked, Its exciting to find that our bird-banding data reflect environmental signals so strongly. It seems that birds are very sensitive to their surroundings, making them great subjects for studying global environmental change.

Dr. DeSante, Executive Director of IBP and creator of the MAPS program, added, Of course, the El Niño/Southern Oscillation may affect birds condition through factors in addition to food, such as wind directions over migration routes. Tailwinds during El Niño years may help push the birds northward. During La Niña years, the birds face more headwinds during migration. In those years, they may arrive on their nesting grounds later and be less physically able to lay eggs and raise young. *(continued on page 3)*

WINTERING OVER (Continued)

Nott added, Folks in Washington and Oregon may be surprised that the breeding success of the Neotropical migrant birds in their forests, and even their own back yards, is so closely tied to ocean conditions thousands of miles away in the tropical and subtropical Pacific.

The influence of the North Atlantic on birds that winter in the temperate zone

Between November and April, weather in the Pacific Northwest is greatly influenced by the North Atlantic Oscillation (NAO), the fluctuation in patterns of atmospheric pressure and sea surface temperature in the North Atlantic (www.intellicast.com/DrDewpoint/Library/1137/2/). The scientists also discovered that conditions in the North Atlantic determine the breeding success of some species that breed in the Pacific Northwest and winter in the temperate region from Washington to California. This effect, like that of the El Niño/Southern Oscillation (ENSO) on Neotropical migrants, is most apparent in the late winter and early spring. However, in this case, the researchers have strong evidence that it is the food available on the breeding grounds prior to nesting that is most important to the breeding success of these birds.

Nott explained, It works like this - many of these species, such as Mountain Chickadees, Red-breasted Nuthatches, and Ruby-crowned Kinglets, are important predators of the insects that defoliate huge areas of Washington and Oregon forests, especially the western spruce budworm and the Douglas fir tussock moth. During the positive (warm) phase of the NAO, higher than normal atmospheric pressure in the tropical North Atlantic combined with lower than normal pressure over Iceland induces a milder winter and earlier spring weather in the Pacific Northwest. This, in turn, triggers huge outbreaks of these forest pests in April and May, and probably increases the abundance of other insects. Again, adult birds can attain good physical conditioning prior to breeding and find ample food to feed to their nestlings.

Management implications and global warming

These results suggest that the quality of winter habitat in the tropics, as well as breeding habitat in North America, is critical to many migratory bird species. As this study suggests, the physical condition of Neotropical migrants prior to their spring migration affects the number of young they are able to raise on their Pacific Northwest breeding grounds. For those migrants and for the many hundreds of other species that live in the tropics year-round, habitat quality may also determine survival as well as breeding success.

This study shows why protecting tropical wintering habitat is so critically important, DeSante said. He added, we are currently developing another cooperative bird banding program patterned after MAPS to be implemented in Mexico, Central America, and Caribbean countries. This program will permit us to determine exactly which habitats in the tropics provide birds with the highest rates of survival and the best physical condition to produce large numbers of young.

Virtually all scientists agree that global warming is a statistical certainty. Meteorologists at NOAAs National Climatic Data Center predict that more extreme weather such as droughts, floods, and hurricanes will be associated with cycles such as ENSO and NAO. This study suggests that habitat degradation, either by extreme weather or by direct human activity, on critical tropical wintering grounds may have a profound negative impact on species that nest in our forests and back yards in North America. ❄

Our Mission Statement

Partners In Flight is an international coalition of government agencies, conservation groups, academic institutions, private organizations, and citizens dedicated to the long-term maintenance of healthy populations of native landbirds

Eugene BLM Begins Oak/Pine Habitat Restoration in the Willamette Valley

By Carla Alford

In the foothills of the Southern Willamette Valley, the Bureau of Land Management (BLM) Eugene District, and six non-federal partners are implementing a project to restore and conserve, unique Oak/Pine Woodlands Habitat. The goal of the project is to develop and implement restoration techniques that will improve habitat conditions for Oregon white oak, ponderosa pine and wayside aster (*Aster vialis*). The project is being accomplished through a grant from the National Fish and Wildlife Foundation (NFWF) and matching in-kind services of non-federal partners that include: Institute for Applied Ecology, Salix Associates, Integrated Resource Management, Oregon Herpetological Society, Friends of Buford Park, Northwest Habitat Institute, and Oregon State University.

Agricultural and urban land conversion, past timber harvest and aggressive fire suppression have all led to the degradation, fragmentation and loss of this habitat type which was once wide spread throughout the region. Oak woodlands provide critical habitat for a variety of threatened, endangered and sensitive plant and animal species including Bureau of land Management Sensitive species. Recently, increased awareness and concern has created interest by state and federal agencies and private organizations to both slow the loss and actively restore the remaining areas of oak habitat.

Four oak/pine study sites were selected and baseline data were collected at each site to characterize vegetation, as well as bird, reptile, and amphibian communities. One of these sites was selected as a demonstration area to implement and test various restoration treatments. A comprehensive restoration plan was developed that identified goals and management actions for the 20-acre site. Experimental plots were established to monitor the response of wayside aster and other native species to thinning and fire, and to evaluate the effectiveness of transplanting and seeding of native plants. Long-term monitoring of the site is planned in order to evaluate the success of treatments and monitor response of native and non-native vegetation over time. The first phase of treatments was implemented this year on seven acres which included: cutting and girdling conifers to release oak and pine trees, removal of shrubs and invasive weeds, hand- piling and burning of *(continued page 5)*

slash, and creating brush piles and snag trees for wildlife. Other treatments still planned for the site include; prescribed burning on portions of the area and re-seeding and planting of native vegetation in disturbed areas.

Based on the results of monitoring the BLM will evaluate and adapt its management approach and techniques for future treatments. The contributions of partners with a variety of perspectives and expertise contributed greatly to the success of this project. As a result of this partnership, BLM and its partners exchanged ideas and learned new approaches and methods for achieving restoration goals. The BLM plans to utilize this demonstration site to educate other land managers and the public about techniques for oak woodland restoration, and to expand restoration efforts to additional sites in the future.

For more information contact Carla Alford, Eugene BLM District at :(541) 683-6202, or calford@or.blm.gov

2002 Farm Bill Update

The Farm Security and Rural Investment Act of 2002 (a.k.a. 2002 Farmbill) represents the single most significant commitment of resources toward conservation on private lands in the Nation's history. A projected 17.1 billion will be spent for conservation over a ten year period. Private landowners will benefit from a portfolio of voluntary assistance, including cost-share, land rental, incentive payments, and technical assistance. Of these programs, land birds will likely receive the most direct benefit from the following programs:

Program	1996 Farm Bill	**2002 Farm Bill**
Conservation Reserve Program **(CRP)**	36.4 million acre enrollment cap	**39.2 million acre enrollment cap**
Wildlife Habitat Incentives Program **(WHIP)**	50 million in cost-share assistance	**700 million in cost-share assistance**
Wetland Reserve Program **(WRP)**	1.075 million acre enrollment cap	**2.275 million acre enrollment cap (1.5 billion estimate over 10-years)**

For information about these and other Farm Bill programs, contact a Natural Resources Conservation Service (NRCS) office near you, or visit the Web at http://www.nrcs.usda.gov/programs/farmbill/2002/

Have You Nominated Your Favorite Birding Trail Yet?

Think of it -- a 1,000-mile loop traversing both sides of the Oregon Cascades and highlighting the amazing diversity of birds and the spectacular scenery in the region. Your participation is needed in a project that will raise the stature of birding in this area, and indeed across the state. The Oregon Cascades Birding Trail will be the first of what may be up to eight such trails across Oregon. To learn more and nominate your favorite Oregon Cascades birding spot, visit the Oregon Cascades Birding Trail website: http://www.oregonbirdingtrails.org/

Submissions to the PIF OR/WA Chapter newsletter may be made by contacting Jenny Valdivia, Jenny_Valdivia@fws.gov
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